

### **Amendments to the Claims:**

The listing of claims below will replace all prior versions and listings of claims in the application:

#### **Listing of Claims:**

Claims 1-43 (Canceled)

44. (Original) A three-dimensional display device comprising:

a phantom three-dimensional display device for displaying a phantom three-dimensional image; and

a shutter device formed by a shutter element for controlling a light transmittance, said shutter device being located at a position where said phantom three-dimensional image is reproduced or a position optically equivalent to said position.

45. (Original) A three-dimensional display device as set forth in claim 44, wherein said shutter element is two-dimensionally divided, and each of divided regions are driven independently of the other.

46. (Original) A three-dimensional display device as set forth in claim 44, wherein said shutter element lowers a light transmittance in the region of depth sampling images as two-dimensional images of said phantom image at said shutter element position during a time duration that said phantom three-dimensional image is being reproduced on the other side of said shutter element as viewed from the observer.

47. (Original) A three-dimensional display device as set forth in claim 44, wherein the material of said shutter element is one or combination of guest-host type liquid crystal containing diachronic dye having a different light beam absorption depending upon an orientation of

molecules and liquid crystal having dielectric constant anisotropy, polymer dispersion type liquid crystal containing droplet-like liquid crystal in polymer, polymer dispersed liquid crystal containing a polymer network in liquid crystal, a holographic polymer dispersed liquid crystal having a layer structure of polymer dispersed liquid crystal containing droplet like liquid crystal in polymer and polymer, a holographic polymer dispersed liquid crystal having a layer structure of said polymer dispersed liquid crystal containing a polymer network in the liquid crystal and polymer, and a polymer dispersed liquid crystal wherein said liquid crystal in said polymer dispersed liquid crystal is said guest-host type liquid crystal.

48. (Original) A three-dimensional display device as set forth in claim 44, wherein said phantom three-dimensional display device is constructed with a two-dimensional image display device and a varifocal optical device.

49. (Original) A three-dimensional display device comprising:

- a phantom three-dimensional display device for displaying a phantom three-dimensional image; and

- a shutter device formed by a shutter element for controlling a light transmittance,

- said phantom three-dimensional image being a real image, and said shutter element being a photoreactive element for lowering a light transmittance in a real image region at the position of said shutter element in accordance with an imaging light beam of said real image.

50. (Original) A three-dimensional display device as set forth in claim 49, wherein a material of said photoreactive element is one of a photochromic material, a material consisting of a material causing a photostructural change and liquid crystal, and a material having a nematic-anisotropic phase transition temperature to be varied by photostructural change.

51. (Original) A three-dimensional display device as set forth in claim 49, wherein said phantom three-dimensional display device includes a two-dimensional image display device and a varifocal optical device.

52. (Original) A head-mount display device comprising:

two display devices corresponding to left and right eyes and each including a two-dimensional display device and an optical device having a variable focal length; and

a control device for controlling said two-dimensional display device and said optical device having a variable focal length,

said display devices being mounted to left and right eyes, and said control device synchronously driving said two-dimensional display device and said optical device to perform three-dimensional display.

53. (Original) A head-mount display device as set forth in claim 52, wherein said optical device further comprises a deflection device for varying a direction of a light incident to said optical device, and said control device controls said optical device in such a way that when the image is moving closer to the eyes according to a change of the focal length, the overall display image of said two-dimensional display device is deflected to be closer toward the center between the left and right eyes.

54. (Original) A head-mount display device as set forth in claim 52, wherein said optical device has a transparent material of one of forms of a fixed focus lens shape, a fixed prism shape, and a shape where the fixed deflection mechanism is incorporated into the fixed focus lens or a combination thereof, a layer including a variable refractive index material, and at least a pair of transparent electrodes for sandwiching said layer.

55. (Original) A head-mount display device as set forth in claim 54, wherein said variable refractive index material is liquid crystal having dielectric constant anisotropy and refractive index anisotropy.

56. (Original) A head-mount display device as set forth in claim 55, wherein said variable refractive index material is liquid crystal having dielectric constant anisotropy and refractive index anisotropy, and being dual-frequency liquid crystal having a different physical property having a different sign of a difference in a dielectric constant corresponding to orientation of the liquid crystal molecules between different frequencies  $f_1$  and  $f_2$ .

57. (Original) A head-mount display device as set forth in claim 54, wherein said variable refractive index material is polymer dispersed liquid crystal, and the droplet size of the liquid crystal, or the droplet size of the polymer is smaller than a wavelength of visible light.

58. (Original) A head-mount display device as set forth in claim 54, wherein said fixed focus lens is spherical or non-spherical single lens or fresnel lens.

59. (Original) A head-mount display device as set forth in claim 54, wherein said fixed prism is simple prism or a multi-prism having an array of a plurality of fine prisms.

60. (Original) A head-mount display device as set forth in claim 54, the form where said fixed deflection mechanism is incorporated in to said fixed focus lens is in the form of increasing or decreasing an angle formed by a spherical or non-spherical simple lens or a fresnel lens and an optical axis.

61. (Original) A head-mount display device as set forth in claim 52, wherein said driving device sequentially applies voltages  $V_1$  to  $V_N$  having primary frequencies  $f_1$  to  $f_N$  ( $N \geq 2$ ) to said transparent electrodes for a predetermined period of time and at a predetermined interval.